

the Paper from the Hair, when the Paper is nearer the Hair than when it is at a great distance from it.

O B S. II.

The shadows of all Bodies (Metals, Stones, Glasse, Wood, Horn, Ice, &c.) in this Light were bordered with three parallel fringes or bands of coloured Light, whereof that which was contiguous to the shadow was broadest and most luminous, and that which was remotest from it was narrowest, and so faint, as not easily to be visible. It was difficult to distinguish the Colours unless when the Light fell very obliquely upon a smooth Paper, or some other smooth white Body, so as to make them appear much broader than they would otherwise do. And then the Colours were plainly visible in this order: The first or innermost fringe was violet and deep blue next the shadow, and then light blue, green and yellow in the middle, and red without. The second fringe was almost contiguous to the first, and the third to the second, and both were blue within and yellow and red without, but their Colours were very faint especially those of the third. The Colours therefore proceeded in this order from the shadow, violet, indigo, pale blue, green, yellow, red; blue, yellow, red; pale blue, pale yellow and red. The shadows made by scratches and bubbles in polished plates of Glasse were bordered with the like fringes of coloured Light. And if plates of Looking-glass sloop'd off near the edges with a Diamond cut, be held in the same beam of Light, the Light which passes through the parallel planes of the Glasse will be bordered with the like fringes of Colours

lours where those Planes meet with the Diamond cut, and by this means there will sometimes appear four or five fringes of Colours. Let AB, CD represent the parallel planes of a Looking-glass, and BD the plane of the Diamond-cut, making at B a very obtuse Angle with the plane AB. And let all the Light between the rays ENI and FBM pass directly through the parallel planes of the Glasse, and fall upon the Paper between I and M, and all the Light between the rays GO and HD be refracted by the oblique plane of the Diamond cut BD, and fall upon the Paper between K and L; and the Light which passes directly through the parallel planes of the Glasse, and falls upon the Paper between I and M, will be bordered with three or more fringes at M. *Fig. 2.*

O B S. III.

When the Hair was twelve Feet distant from the Hole, and its shadow fell obliquely upon a flat white scale of Inches and parts of an Inch placed half a Foot beyond it, and also when the shadow fell perpendicularly upon the same scale placed nine Feet beyond it; I measured the breadth of the shadow and fringes as accurately as I could, and found them in parts of an Inch as follows.

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